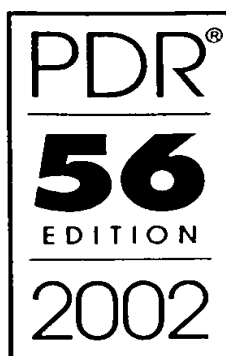


# **EXHIBIT M**



# PHYSICIANS' DESK REFERENCE®

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## MEDICAL ECONOMICS

THOMSON HEALTHCARE

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lis

ND RAPID BLOOD AND URINE LEVELS ARE INDICATED. THERAPY WITH PENICILLIN DISODIUM SHOULD BE PARENTERAL ADMINISTRATION, FOLLOWING PHYSICIAN'S DISCRETION, BY ORAL

ality testing should be performed prior to course of therapy to detect the possible resistant organisms which may develop

#### CATIONS

arly contraindicated in patients who have an allergy.

asionally fatal hypersensitivity (anaphylaxis) have been reported in patients on oral penicillin. Although anaphylaxis is more frequent following therapy, it has occurred in patients on oral therapy. Reactions are more apt to occur in individuals with hypersensitivity and/or a history of multiple allergies.

reports of individuals with a history of penicillins who have experienced severe reactions when treated with a cephalosporin. Before initiating therapy with a penicillin, should be made concerning previous hypersensitivity to penicillins, cephalosporins, or other allergic reaction occurs, the drug should be discontinued and the appropriate therapy instituted.

PHYLACTOID REACTIONS REQUIRE EMERGENCY TREATMENT WITH EPINEPHRINE, INTRAVENOUS STEROIDS AND AIRWAY MANAGEMENT, INCLUDING INTUBATION, SHOULD BE ADMINISTERED AS INDICATED.

#### VS

with any penicillin preparation, an allergic reaction anaphylaxis, may occur particularly in a individual.

of Geocillin may result in the overgrowth of organisms. If superinfection occurs during therapy, appropriate measures should be taken.

Geocillin is primarily excreted by the kidney, and in patients with renal impairment (creatinine clearance of 10 ml/min) will not achieve therapeutic urine levels.

urinary creatinine clearance of 10-20 ml/min may be used to adjust dosage to prevent accumulation

tests: As with other penicillins, periodic assessment of organ system function including renal, hepatic, and hematologic systems is recommended during therapy.

tests: Geocillin (carbenicillin indanyl sodium) may be increased and prolonged by concurrent use of probenecid.

is. Mutagenesis. Impairment of Fertility: Long-term animal or human studies to evaluate potential. Rats fed 250-1000 mg/kg/day for 14 weeks showed no evidence of adverse effects on reproductive performance. There was no evidence of neoplasia. Geocillin administered at daily doses of 1000 mg/kg had no apparent effect on the reproductive performance of rats.

Category B: Reproduction studies have been conducted in rats and monkeys with no harm to the fetus. There are, however, no adequate studies in pregnant women. Because animal studies are not always predictive of human, this drug should be used during pregnancy only if the benefits outweigh the risks.

Delivery: It is not known whether the use of Geocillin during labor or delivery has immediate adverse effects on the fetus, prolongs the duration of labor, or increases the likelihood of delivery complications. Therefore, the use of Geocillin during labor or delivery should be based on the clinical judgment of the physician.

Tests: Carbenicillin class antibiotics are excreted in the urine. Although the amounts excreted are unknown, caution should be exercised if administered to a patient with renal impairment.

Since only limited clinical data is available on the safety of Geocillin administration in children, the safety of Geocillin administration in children has not yet been established.

#### REACTIONS

adverse reactions have been reported as possible with Geocillin administration in controlled studies. The most frequent adverse reactions associated with Geocillin therapy are related to the gastrointestinal tract.

Nausea, bad taste, diarrhea, vomiting, flatulence, and constipation have been reported.

Dermatologic: Hypersensitivity reactions such as skin rash, urticaria, and frequently pruritus.

Hematologic: With other penicillins, anemia, thrombocytopenia, leukopenia, neutropenia, and eosinophilia have infrequently been observed. The clinical significance of these abnormalities is not known.

Miscellaneous: Other reactions rarely reported were hyperthermia, headache, itchy eyes, vaginitis, and loose stools.

Abnormalities of Hepatic Function Tests: Mild SGOT elevations have been observed following Geocillin administration.

#### OVERDOSAGE

Geocillin is generally nontoxic. Geocillin when taken in excessive amounts may produce mild gastrointestinal irritation. The drug is rapidly excreted in the urine and symptoms are transitory. The usual symptoms of anaphylaxis may occur in hypersensitive individuals.

Carbenicillin blood levels achievable with Geocillin are very low, and toxic reactions as a function of overdosage should not occur systematically. The oral LD<sub>50</sub> in mice is 3,600 mg/kg, in rats 2,000 mg/kg, and in dogs is in excess of 500 mg/kg. The lethal human dose is not known.

Although never reported, the possibility of accumulation of indanyl should be considered when large amounts of Geocillin are ingested. Free indole, which is a phenol derivative, may be potentially toxic. In general 8-15 grams of phenol, and presumably a similar amount of indole, are required orally before toxicity (peripheral vascular collapse) may occur. The metabolic by-products of indole are nontoxic. In patients with hepatic failure it may be possible for unmetabolized indole to accumulate.

The metabolic by-products of Geocillin, indanyl sulfate and glucuronide, as well as free carbenicillin, are dialyzable.

#### DOSAGE AND ADMINISTRATION

Geocillin is available as a coated tablet to be administered orally.

##### Usual Adult Dose

#### URINARY TRACT INFECTIONS

<i>Escherichia coli</i> , <i>Proteus</i> species, and <i>Enterobacter</i>	1-2 tablets 4 times daily
<i>Pseudomonas</i> and <i>Enterococcus</i>	2 tablets 4 times daily

#### PROSTATITIS

<i>Escherichia coli</i> , <i>Proteus mirabilis</i> , <i>Enterobacter</i> and <i>Enterococcus</i>	2 tablets 4 times daily
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#### HOW SUPPLIED

Geocillin is available as film-coated tablets in bottles of 100's (NDC 0049-1430-66), and unit-dose packages of 100 (10 x 10's) (NDC 0049-1430-41). Each tablet contains carbenicillin indanyl sodium equivalent to 382 mg of carbenicillin.

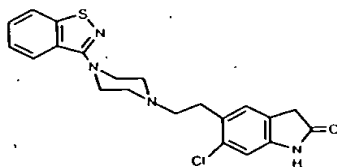
Revised Sept. 1991

69-1970-00-2

#### GEODON™ (ziprasidone HCl)

#### DESCRIPTION

GEODON™ is available as GEODON Capsules (ziprasidone hydrochloride) for oral administration. Ziprasidone is an antipsychotic agent that is chemically unrelated to phenothiazine or butyrophenone antipsychotic agents. It has a molecular weight of 412.94 (free base), with the following chemical name: 5-[2-[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl]ethyl]-6-chloro-1,3-dihydro-2H-indol-2-one. The empirical formula of C<sub>21</sub>H<sub>21</sub>ClN<sub>3</sub>OS (free base of ziprasidone) represents the following structural formula:



GEODON Capsules contain a monohydrochloride, monohydrate salt of ziprasidone. Chemically, ziprasidone hydrochloride monohydrate is 5-[2-[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl]ethyl]-6-chloro-1,3-dihydro-2H-indol-2-one, monohydrochloride, monohydrate. The empirical formula is C<sub>21</sub>H<sub>21</sub>ClN<sub>3</sub>OS·HCl·H<sub>2</sub>O and its molecular weight is 467.42. Ziprasidone hydrochloride monohydrate is a white to slightly pink powder.

GEODON Capsules are supplied for oral administration in 20 mg (blue/white), 40 mg (blue/blue), 60 mg (white/white), and 80 mg (blue/white) capsules. GEODON Capsules contain ziprasidone hydrochloride monohydrate, lactose, pregelatinized starch, and magnesium stearate.

#### CLINICAL PHARMACOLOGY

##### Pharmacodynamics

5HT<sub>1A</sub> and α<sub>1</sub>-adrenergic receptors (K<sub>i</sub>'s of 4.8, 7.2, 0.4, 3.4, 2, and 10 nM, respectively), and moderate affinity for the histamine H<sub>1</sub> receptor (K<sub>i</sub>=47 nM). Ziprasidone is not an antagonist at the D<sub>1</sub>, 5HT<sub>2A</sub>, and 5HT<sub>2C</sub> receptors, and as an agonist at the 5HT<sub>1A</sub> receptor. Ziprasidone inhibited synaptic reuptake of serotonin and norepinephrine. No appreciable affinity was exhibited for other neurotransmitter receptors tested, including the cholinergic muscarinic receptor (K<sub>i</sub> > 1 μM).

The mechanism of action of ziprasidone, as with other drugs having efficacy in schizophrenia, is unknown. However, it has been proposed that this drug's efficacy in schizophrenia is mediated through a combination of dopamine type 2 (D<sub>2</sub>) and serotonin type 2 (5HT<sub>2</sub>) antagonism. Antagonism at receptors other than dopamine and 5HT<sub>2</sub> with similar receptor affinities may explain some of the other therapeutic side effects of ziprasidone.

Ziprasidone's antagonism of histamine H<sub>1</sub> receptors may explain the somnolence observed with this drug.

Ziprasidone's antagonism of α<sub>1</sub>-adrenergic receptors may explain the orthostatic hypotension observed with this drug.

##### Pharmacokinetics

Ziprasidone's activity is primarily due to the parent drug. The multiple-dose pharmacokinetics of ziprasidone is dose-proportional within the proposed clinical dose range, and ziprasidone accumulation is predictable with multiple dosing. Elimination of ziprasidone is mainly via hepatic metabolism with a mean terminal half-life of about 7 hours within the proposed clinical dose range. Steady-state concentrations are achieved within one to three days of dosing. The mean apparent systemic clearance is 7.5 ml/min/kg. Ziprasidone is unlikely to interfere with the metabolism of drugs metabolized by cytochrome P450 enzymes.

**Absorption:** Ziprasidone is well absorbed after oral administration, reaching peak plasma concentrations in 1-2 hours. The absolute bioavailability of a 20 mg dose under fasted conditions is approximately 60%. The absorption of ziprasidone is increased up to two-fold in the presence of food.

**Distribution:** Ziprasidone has a mean apparent volume of distribution of 1.5 L/kg. It is greater than 99% bound to plasma proteins, binding primarily to albumin and α<sub>1</sub>-glycoprotein. The *in vitro* plasma protein binding of ziprasidone was not altered by warfarin or propranolol, highly protein-bound drugs, nor did ziprasidone alter the binding of these drugs in human plasma. Thus, the potential for drug interactions with ziprasidone due to displacement is minimal.

**Metabolism and Elimination:** Ziprasidone is extensively metabolized after oral administration with only 1% of the amount excreted in the urine (<1%) or feces (<4%) unchanged drug. Ziprasidone is primarily cleared via metabolic routes to yield four major circulating metabolites: a benzisothiazole (BITP) sulfoxide, BITP-sulfoxide, ziprasidone sulfoxide, and S-methyl-dihydroziprasidone. Approximately 20% of the dose is excreted in the urine, approximately 66% being eliminated in the feces. The unchanged ziprasidone represents about 44% of the total related material in serum. *In vitro* studies using liver subcellular fractions indicate that S-methyl-dihydroziprasidone is generated in two steps. The data indicate that the reduction reaction is mediated by aldehyde reductase and the subsequent methylation is mediated by this enzyme and the subsequent methylation is mediated by this enzyme and the subsequent methylation is mediated by this enzyme. *In vitro* studies using human liver microsomes and recombinant enzymes indicate that CYP1A2 is the major CYP contributing to the oxidative metabolism of ziprasidone. CYP1A2 may contribute to a much lesser extent. Based on *in vivo* abundance of excretory metabolites, less than one-third of ziprasidone metabolic clearance is mediated by cytochrome P450 catalyzed oxidation and approximately two-thirds via reduction by aldehyde reductase. There are no known clinically relevant inhibitors or inducers of aldehyde reductase.

##### Special Populations

**Age and Gender Effects:** In a multiple-dose (12-week treatment) study involving 32 subjects, there was no difference in the pharmacokinetics of ziprasidone between men and women or between elderly (>65 years) and younger (45 years) subjects. Additionally, population pharmacokinetic evaluation of patients in controlled trials did not show evidence of clinically significant age or gender differences in the pharmacokinetics of ziprasidone. Therefore, no modifications for age or gender are recommended.

**Race:** No specific pharmacokinetic study was conducted to investigate the effects of race. Population pharmacokinetic evaluation has revealed no evidence of clinically significant race-related differences in the pharmacokinetics of ziprasidone. Dosage modifications for race are not recommended.

**Smoking:** Based on *in vitro* studies utilizing liver microsomes, ziprasidone is not a substrate for CYP1A2 and therefore should not have an effect on the pharmacokinetics of ziprasidone. Consistent with these findings, population pharmacokinetic evaluation has not shown any significant pharmacokinetic differences between smokers and nonsmokers.

**Renal Impairment:** Because ziprasidone is primarily metabolized, with less than 1% of the drug excreted unchanged in the urine, renal impairment alone is unlikely to have a significant effect on the pharmacokinetics of ziprasidone. The pharmacokinetics of ziprasidone following 8 days of 20 mg